

OSPF TE Topology-Transparent Zone

draft-chen-ospf-te-ttz-00

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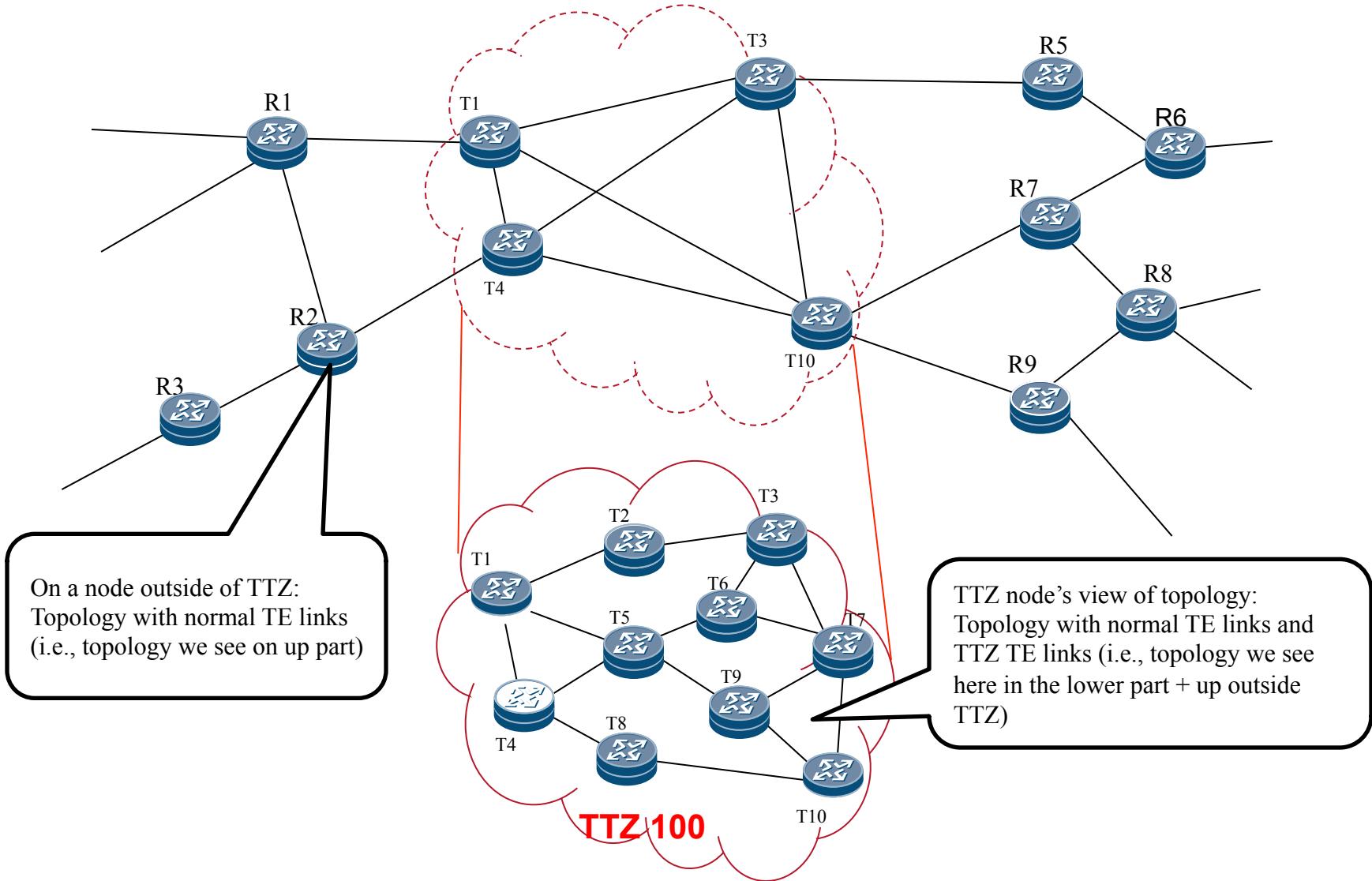
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Introduction to OSPF-TE TTZ

(virtual) between two edges with maximum bandwidth of path between them



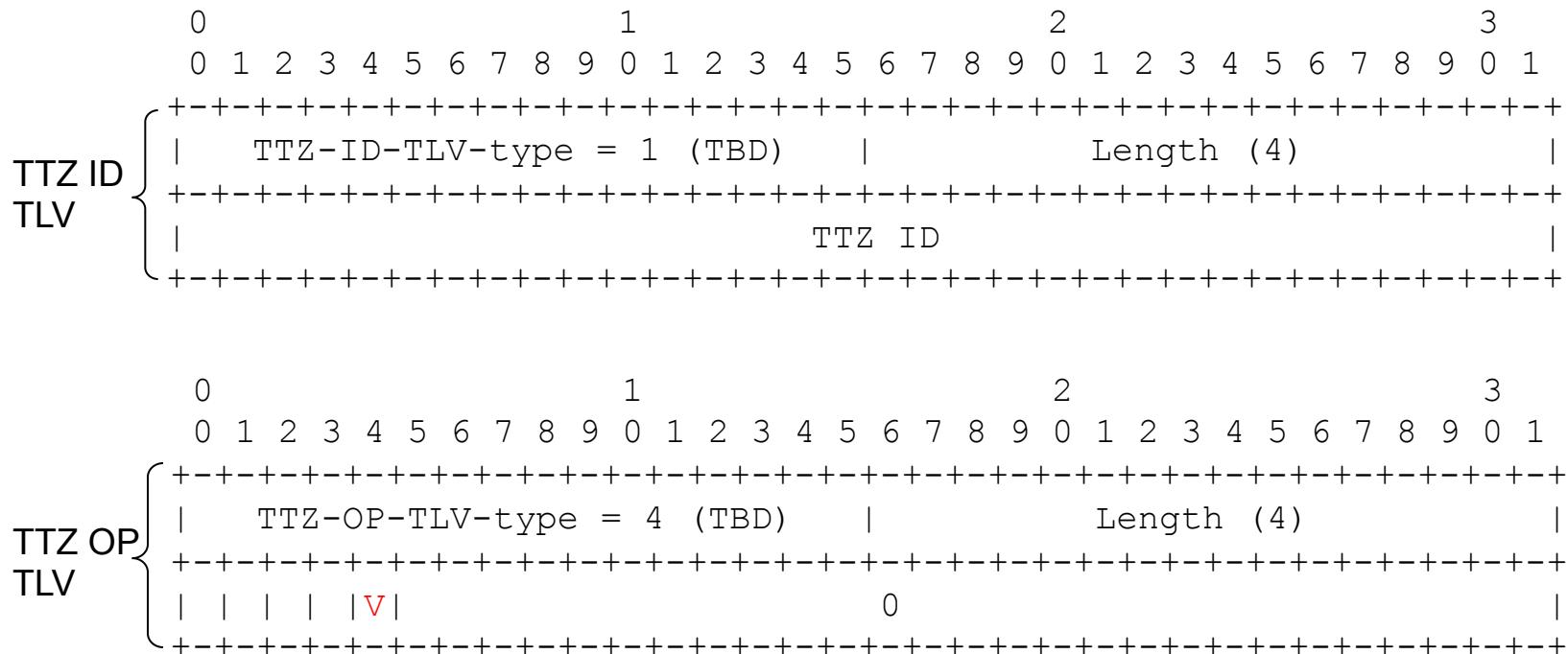
Add TTZ ID TLV into Existing TE LSA

TLVs:

- Router Address TLV (Existing)
 - Link TLV (Existing)
 - TTZ ID TLV (Added)
 - TTZ Options TLV (Added into TE LSA for virtualizing TTZ)

This is simple, but it is hard to flush out LSAs for TTZ.

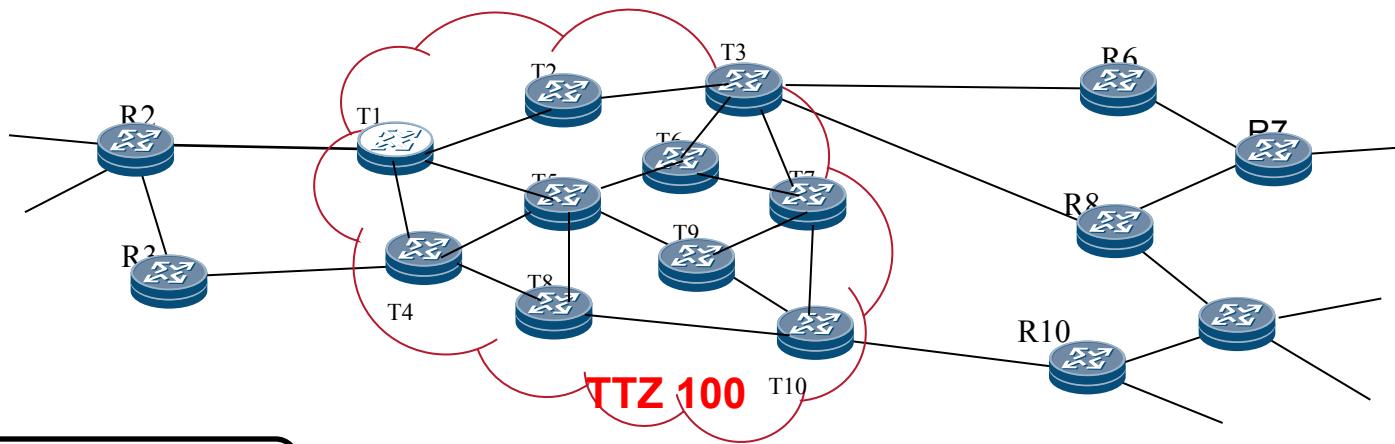
TTZ TLVs



V = 1: P2P link between two edges of TTZ for virtualizing TTZ

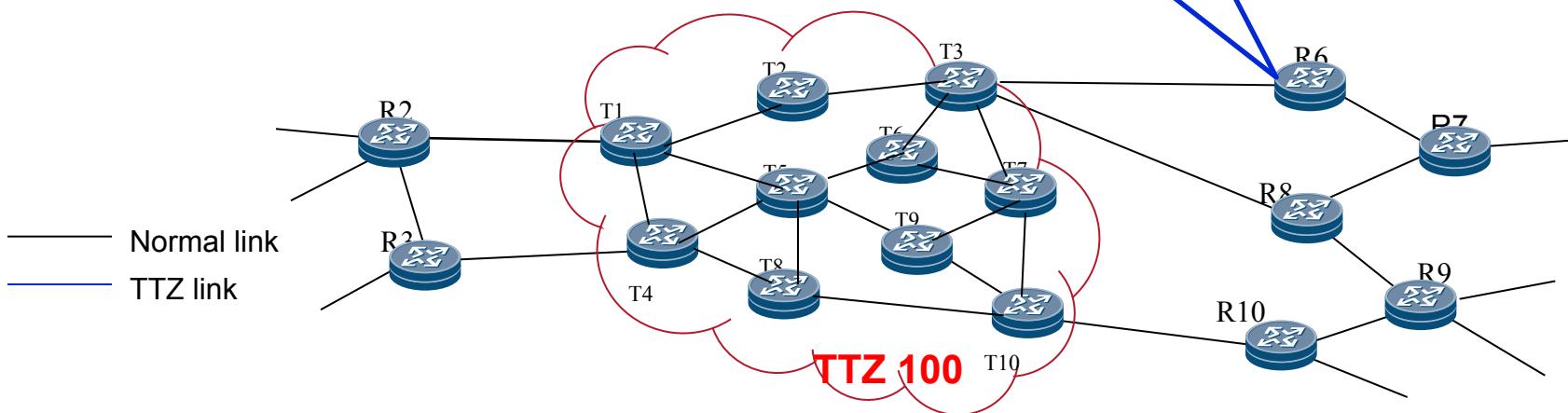
TTZ OP TLV with V=1 added into TE LSAs for virtualizing TTZ, explicit indication

Migration to TTZ (1/2)



1. Distribute TTZ Information:
TTZ ID TLV added into TE
LSAs for links in TTZ

A node outside TTZ
ignores TTZ ID TLV



Normal link

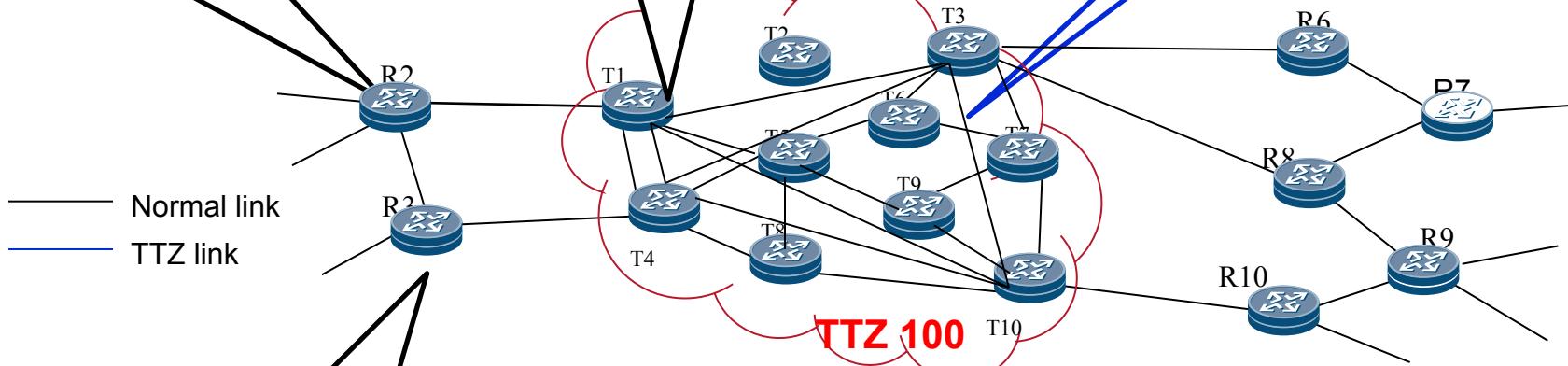
TTZ link

Migration to TTZ (2/2)

View topology with normal TE links before TE LSAs for TTZ TE links aged out (e.g., see TE topology we see here)

2. Originate TE LSAs for virtualizing TTZ, and Not distribute TE LSAs for TTZ TE links to outside of TTZ

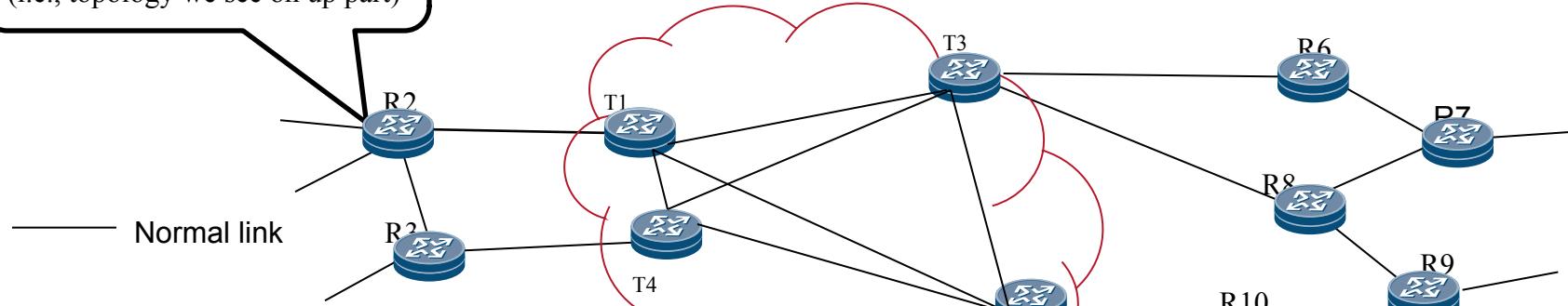
TE LSAs for virtualizing TTZ



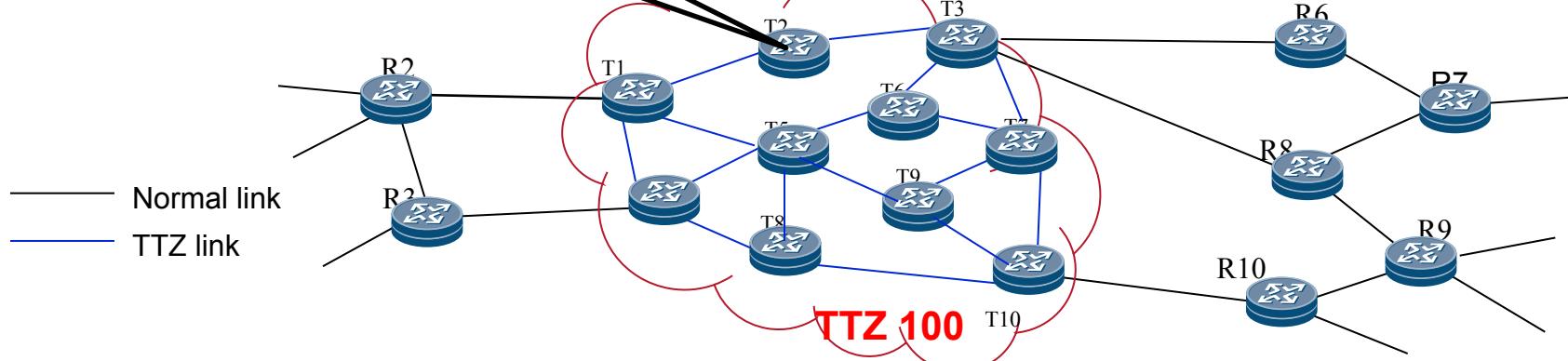
Aged out TE LSAs for TE links in TTZ in nodes outside of TTZ after some time (<1 hour)

After Migration to TTZ for ~1- hour

On a node outside of TTZ:
Topology with normal TE links
(i.e., topology we see on up part)



TTZ node's view of topology:
Topology with normal TE links
and TTZ TE links (i.e., topology
we see here in the lower part)



Put Contents of TE LSA into another LSA

Format of Opaque LSA for TE TTZ

0	1	2	3
0 1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1
+-----+			
LS age	Options	LS Type=10	
+-----+			
TTZ-LSA-type	Opaque ID		
+-----+			
Advertising Router			
+-----+			
LS sequence number			
+-----+			
LS checksum	length		
+-----+			
~	TLVs		~
+-----+			

TTZ-LSA-type:

TTZ-TE-LSA-type (15?, TBD) for TTZ TE LSA

LSAs for normal TE LSAs of TTZ can be flushed out easily and quickly after migration to TTZ.

TLVs:

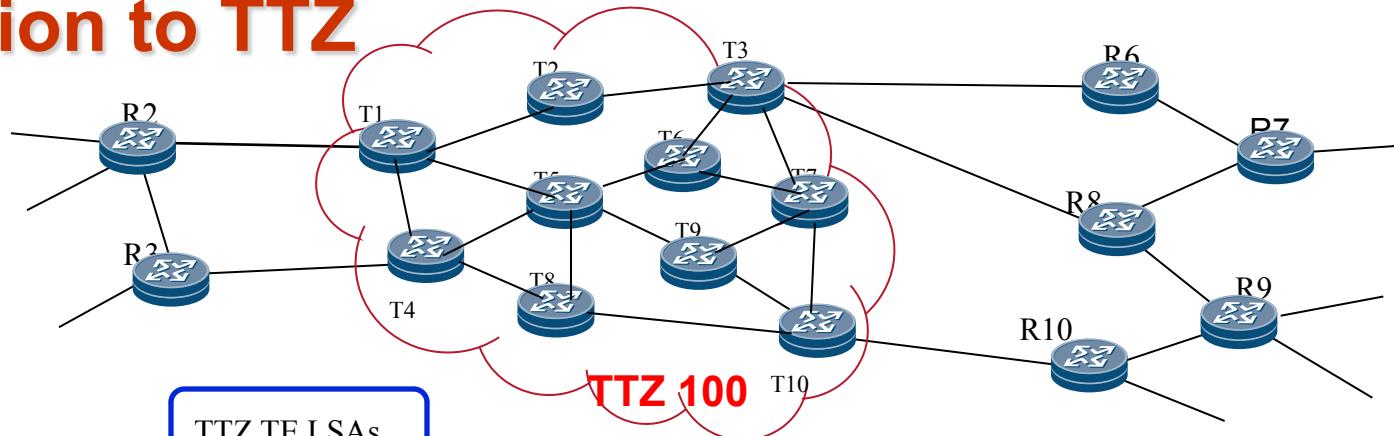
Router Address TLV (from TE LSA)

Link TLV (from TE LSA)

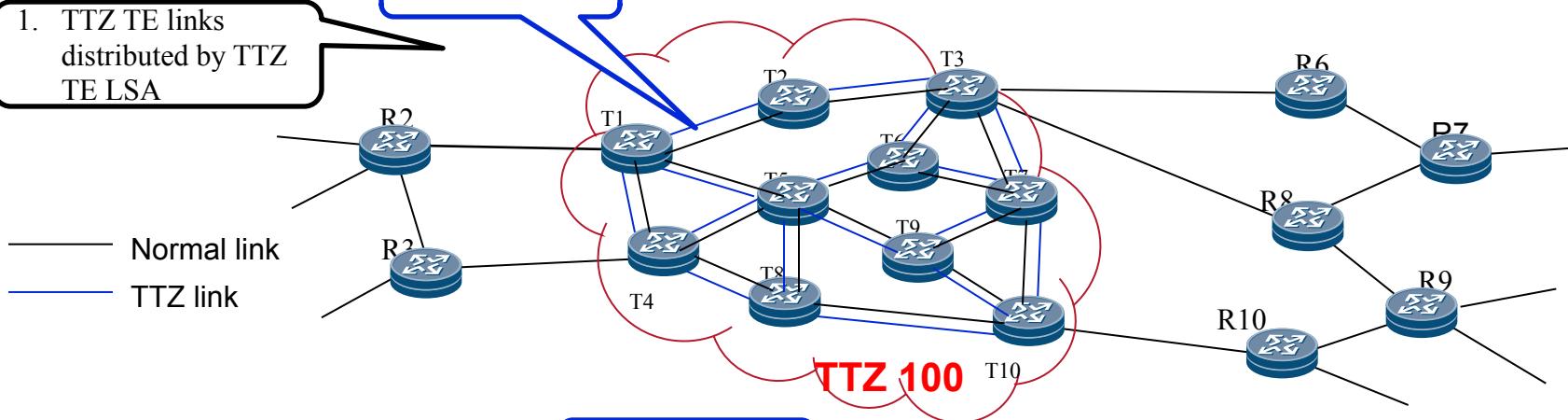
TTZ ID TLV

(TTZ Options TLV added into TE LSA
for virtualizing TTZ, explicit indication)

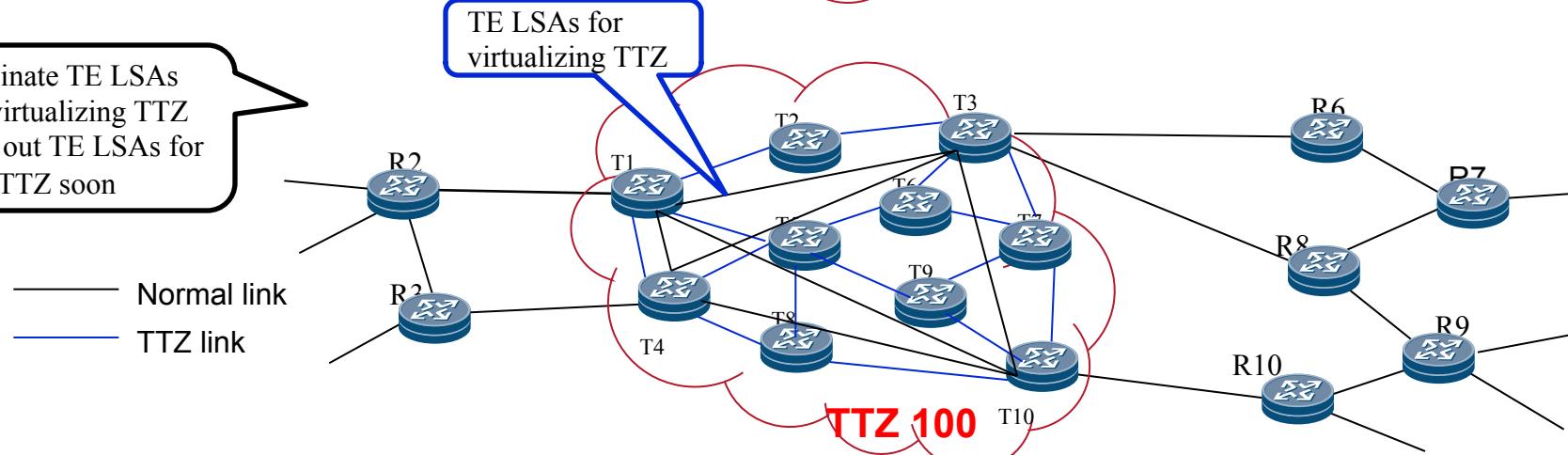
Migration to TTZ



1. TTZ TE links distributed by TTZ TE LSA

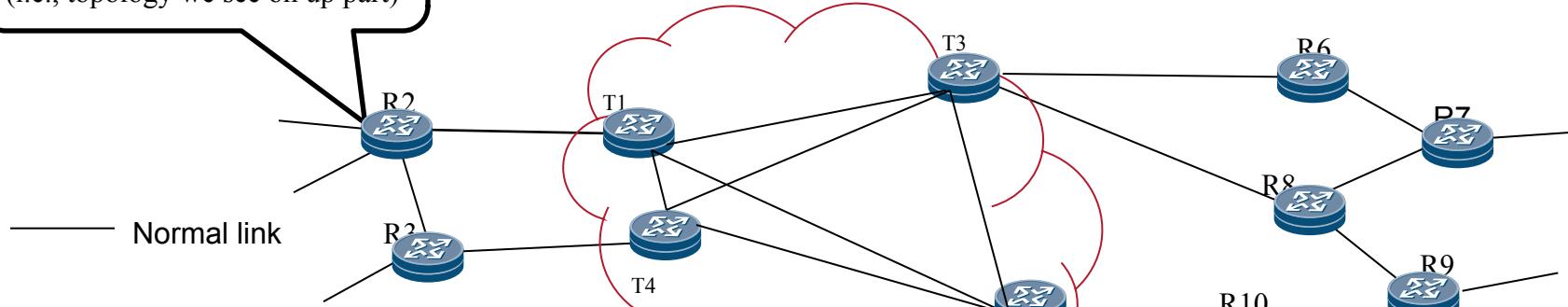


2. Originate TE LSAs for virtualizing TTZ
Flushed out TE LSAs for links in TTZ soon

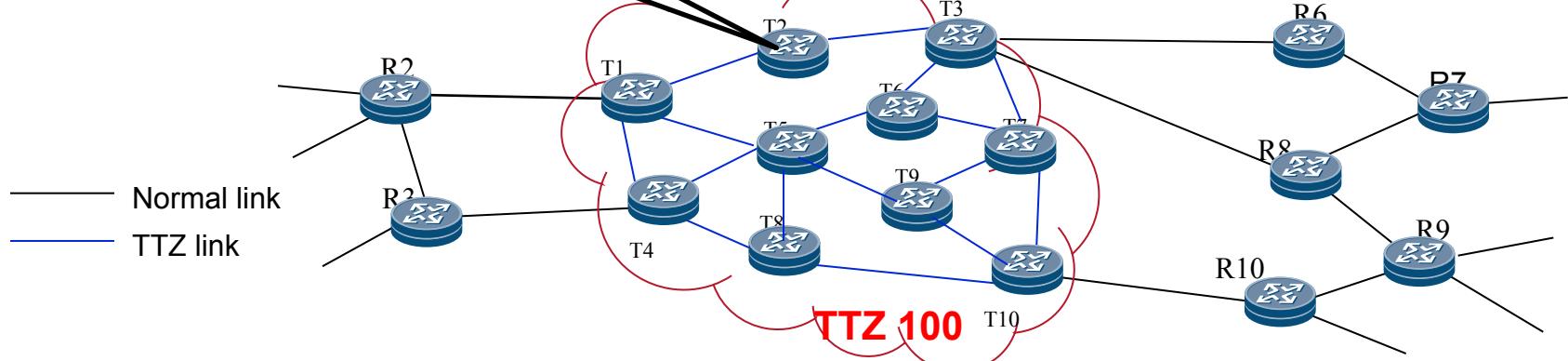


After Migration to TTZ

On a node outside of TTZ:
Topology with normal TE links
(i.e., topology we see on up part)

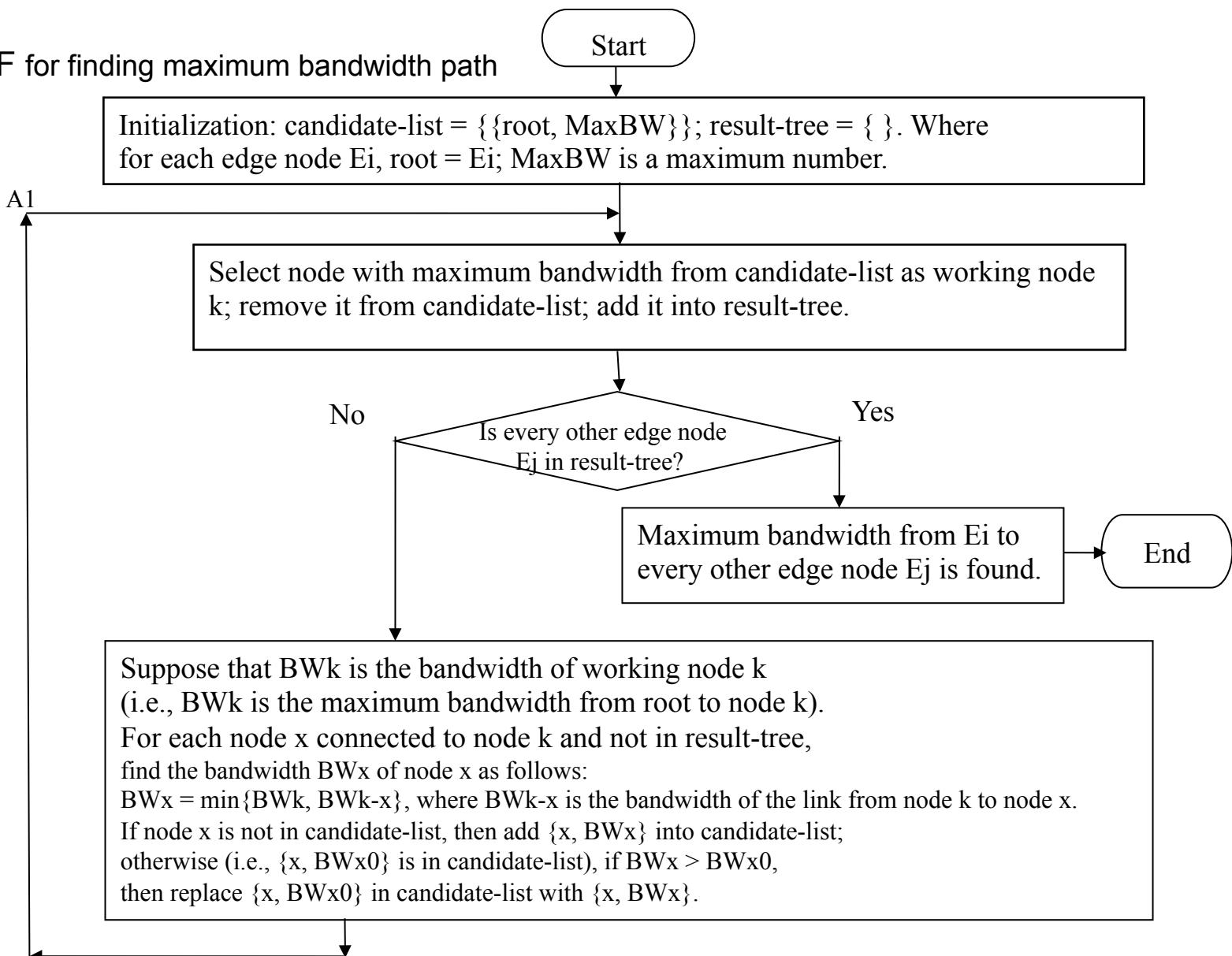


TTZ node's view of topology:
Topology with normal TE links
and TTZ TE links (i.e., topology
we see here in the lower part)



Summarize TE for TTZ

SPF for finding maximum bandwidth path



Next Step

Welcome comments